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1.0 ENVIRONMENTAL MANAGEMENT

1.1 INTRODUCTION

The Project will develop, establish, and maintain a comprehensive Project Environmental Management System (PEMS). The PEMS will reflect the policies and management systems of Project owner companies and the principles for such management systems as set out in the international standard ISO 14001.[1] The PEMS will focus on achieving a high level of environmental protection and ensuring compliance with regulatory requirements.

Given the large size and unique nature of the Project, the management of environmental protection with respect to construction of the Project is a complex task that requires application of a sophisticated management approach. The Project recognizes that effective management and communication of the extensive compliance requirements among the hundreds of workers, supervisors and managers involved, coupled with a reliable and functional compliance monitoring system, will be critical to the success of the Project. The PEMS will continue to be developed to address these needs.

1.2 CRITERIA

1.2.1 General Project Criteria

The general Project criteria for development of methodologies for environmental management include:

- Project Environmental Policy
- Project Quality Program
- ISO 14001 Template for Environmental Management Systems

1.2.2 Statutes, Regulations, and Other Applicable Authorities

Although statutes and regulations do not specifically require environmental management systems or programs to be developed and implemented for the Project, the basis for the environmental protection programs exists in state and federal regulations. These are identified as criteria for environmental protection in the other topic sections of this volume (e.g., Air Quality Protection, ENVIS02, lists appropriate state and federal air quality statutes and regulations as criteria).

Other applicable authorities that will be reviewed for the Project include:

- 18 CFR 380.12, "FERC's Environmental Reports for Natural Gas Act Applications," and FERC environmental policy guidelines thereunder; and

[1] International Organization For Standardization: http://www.iso.ch/iso/en/ISOOnline.frontpage.

- Federal Right-of-Way Grant for the Alaska Natural Gas Transportation System Alaska Segment, Serial No. F-24538 (December 1, 1980), as such may be updated and/or amended.
- Federal Energy Regulatory Commission conditional certificate of public convenience and necessity, issued on December 16, 1977, as such is finalized.

1.3 METHODOLOGIES

1.3.1 Project Environmental Management System (PEMS)

The PEMS will incorporate fifteen (15) key elements of environmental management as specified by the ISO 14001 template. These elements are listed below, together with a brief description of the Project's progress in addressing each of them:

1. An environmental policy supported by top management.
    - A copy of the TransCanada PipeLines Limited Corporate Environment Commitment Statement is attached as Attachment 1.A. This policy, or a similar policy issued by a different Project sponsor in the future, would become the Project Environmental Policy.
2. Identification of environmental aspects and significant impacts.
    - The previously issued EIS documents and President's Decision and Report on the ANGTS Project provide thorough and comprehensive analyses of the environmental aspects and impacts of the Project.
    - Implementation of the Project's prior environmental programs led to the development of an extensive amount of baseline information from research and field studies, as well as preliminary mitigation approaches for the Project. This information is documented in:
        - Environmental Master Guide,[2] sensitive environmental areas mapped onto the current pipeline alignment, as such document is amended and/or updated in the future.
        - List of Sensitive Environmental Areas and Activity Restrictions.[3]
        - List of Stream Crossings and Activity Restrictions.[4]

[2] Environmental Master Guide, Alaska Segment of the Alaska Natural Gas Transportation System. Rev. 3. [sheets] (ANNGTC, Mar. 1981). This document is stamped, marked or otherwise identified as confidential and/or proprietary or otherwise protected. The ANNGTC continues to claim confidential treatment for this document, and it should be withheld from disclosure to any third party.

[3] List of Sensitive Wildlife Areas Between Prudhoe Bay and the Canadian Border Along the Proposed Northwest Alaskan Pipeline Company Gas Pipeline Route (Office of the Federal Inspector, Nov. 25, 1981).

- Environmental Engineering Manual (EMM), as such document is amended and/or updated in the future.

- Numerous reports that document field work or other research concerning environmental aspects of the Project that are referenced in the topic sections of this volume.

- Substantial information about environmental impact and mitigation associated with a buried pipeline along the Project route has been developed over the past 25 years since the construction of the TAPS. This information will be reviewed and relevant findings will be incorporated as appropriate into the mitigation approaches.

3. Identification of legal and other requirements.

   - The Alaska Natural Gas Transportation Act and the President's Decision and Report on the ANGTS Project issued thereunder are the principle legal authorizations for the Project and the selected pipeline route.

   - The topic sections within this volume list the legal requirements under the criteria that may apply to the Project for each particular topic. These are preliminary and may be expanded as the PEMS is developed.

   - A preliminary list of major permits and authorizations for the Project has been prepared and submitted as part of the Project's State right-of-way application.

4. Environmental goals, objectives, and targets that support the policy.

   - These are summarized in each of the topic sections of this volume. These are preliminary and may be expanded as the PEMS is developed.

5. An environmental management program.

   - An Environmental Management Program (EMP) will be developed for the Project. The purpose of the EMP is to integrate and manage the various environmental protection programs (as described in the sections of this volume).

   - The Project Management Team will identify specific personnel responsible for Environmental Management (EM). The EM staff will be assigned to implement the EMP.

6. Definition of roles, responsibilities, and authorities.

   - The definition of roles, responsibilities and authorities for attaining environmental compliance by the Project will be established and listed in the EMM. Roles,

[4] List of Sensitive Fish Streams and Activity Restrictions Between Prudhoe Bay and the Canadian Border Along the Proposed Northwest Alaskan Pipeline Company Gas Pipeline Route (Office of the Federal Inspector, Apr. 5, 1984).

responsibilities and authorities for Project contractors also will be defined and included in the construction contracts for the Project.

7. Training and awareness procedures.

    - The Project will conduct a program of Environmental Briefings, Orientation, and Education as described in Section 11 of this volume (ENVIS11).

8. Process for communication of the PEMS to all interested parties.

    - The PEMS will be communicated to the Project management, staff and contractors through a combination of methods through implementation of the Environmental Briefings, Orientation, and Education as described in Section 11 of this volume (ENVIS11).

9. Document and operational control procedures.

    - The specific criteria and methodologies for attaining environmental compliance will be established in the construction specifications or drawings for the Project.

    - Construction contracts awarded for the Project will include these specifications or drawings.

10. Procedures for emergency response.

    - Emergency response procedures will be developed and implemented as outlined in Section 10 of this volume, Pipeline Contingency (ENVIS10).

11. Procedures for monitoring and measuring operations that can have a significant impact on the environment.

    - An inspection program will be conducted according to the Quality Assurance Plan, (TIS35).

12. Procedures to correct nonconformance.

    - The Project will have the ability to exercise control over construction contractors through contractual agreements that mandate compliance with environmental compliance specifications.

13. Records management procedures.

    - A computer-based records management system will be developed for the PEMS.

14. A program for auditing and corrective action.

    - A program for auditing and corrective action will be developed in coordination with the Inspection and Quality Assurance Programs.

15. Procedures for management review.

    - Project Management will have immediate access to compliance and other environmental information through a software-based information and records system that will be established by the PEMS.

The Project will utilize a variety of tools for implementation of the PEMS, including a customized software database that is capable of storing, updating, manipulating, and reporting information related to the various environmental protection programs. The software database will be capable of exchanging and updating information among field inspectors, environmental protection field staff and the Quality Program management staff in the field offices. Project Management staff and regulatory inspectors will have real-time access to updated compliance information.

The EMS will be developed consistent with the principles and format of ISO 14001, the recognized international standard for environmental management systems. ISO 14001 is designed to assist organizations in improving their environmental performance. It is not a product or performance standard. Rather than specifying or dictating requirements for environmental compliance, ISO 14001 sets forth standards for processes that influence the impact of an organization's activities on the environment, including identification of significant environmental aspects of the organization's activities, training, documentation, reporting and communications.

Some unique and important characteristics of ISO 14001 are:

- It is comprehensive: All members of the organization participate and all environmental impacts are identified through a defined process.
- It is proactive: It focuses on continuous process improvement, allowing many companies to report increased profitability.
- It is a systems approach, stressing improved environmental protection by using a single environmental management system across all functions of the organization.

1.3.2 Organization

The Project Management Team is responsible for the management of design, procurement, and construction activities for the project and is responsible for environmental compliance. The Project Management Team will establish the Environmental Management (EM) organization that will implement the PEMS.

The EM staff assigned to implement the PEMS will support the execution of the program and the Environmental Protection Plans (EPPs) through all phases of the Project. The tasks that the EM staff will be responsible for include, among others:

- Developing, establishing and maintaining the environmental protection programs and associated EPPs.
- Interfacing with resource agencies and other stakeholders.

- Gathering additional information as needed.
- Providing information to support design of the Project.
- Providing information to support construction planning, including detailed schedules, specifications and drawings as appropriate.
- Providing assistance in ensuring that designs and plans are executed as part of the Inspection and Quality Assurance Programs.
- Post-construction monitoring to establish that the designs and plans were successful and to identify any necessary remedial activities.

Project teams will complete design, construction planning, field inspection and quality assurance activities. The EM staff will support and/or participate as appropriate on these teams to facilitate integration of the environmental protection programs.

1.3.3 Project Documents

One of the primary functions of the EMP is to produce and continually update a set of documents, which provide environmental guidance to the other Project disciplines. The central document for Project Environmental Management is the Environmental Management Manual (EMM), which sets forth the immediate goals of each environmental program, the developmental milestones to achieve those goals, and the manner in which each program contributes to design and planning elements. An EMM document will be developed to serve as a guide to the implementation of the EMP through integration of the environmental protection programs with the engineering and other technical programs through all phases of the Project.

1.3.3.1 Environmental Management Manual (EMM)

The EMM is a comprehensive guide to the integration of environmental requirements and considerations into all phases of the Project. The EMM is the primary environmental document for the Project and presents the Project's environmental protection approach. The EMM will be developed from the Project's existing Environmental Engineering Manual[5] and will be updated during the development of the various environmental protection programs as needed. The Project will coordinate with the Alaska Department of Fish and Game (ADFG), Alaska Department of Environmental Conservation (ADEC), Alaska Department of Natural Resources (ADNR) and other agencies as appropriate in the identification of environmental baseline information and protection criteria that will aid in development of the EMM document.

1.3.3.2 Environmental Protection Plans (EPPs)

The EPPs will evaluate each Project element for potential environmental impact, and, if an impact is foreseen, the EPPs will identify specific mitigation techniques. The EPPs will provide a

[5] Environmental Engineering Manual, Exhibit Z-1.1, Volume III, Application Before the Federal Energy Regulatory Commission For a Final Certificate of Public Convenience and Necessity Pursuant to Section 7 of the Natural Gas Act, as amended, and Section 9 of the Alaska Natural Gas Transportation Act of 1976 to construct and operate the Alaska Segment of the Alaska Natural Gas Transportation System, Docket No. CP80 (ANNGTC, July 1, 1980).

mechanism for incorporating environmental protection into the Project plans and designs. The format for the EPPs will include the following elements, among others:

- Comprehensive mitigation plans and approaches for the identified environmental concerns.
- Additional or supplementary information to provide detailed and/or site-specific data required to support final design.
- Reference to the applicable reports that document the results of specific environmental studies and/or site-specific environmental assessments. These reports will include demonstration of compliance with current regulatory requirements.
- Justification statements for all proposed design features or activities not in conformance with environmental requirements.
- Sufficient environmental information concerning design and schedule elements so that on-site decision making is effective and efficient.
- Definitions of the roles, responsibilities, and authorities for implementation of the plans.
- Identification of the mechanisms that will be used to ensure environmental compliance by construction contractors, including direction for incorporating specifications and/or drawings into contractual agreements.

The EPPs will be the end product of planned research and design work, presenting a responsible, comprehensive final design ensuring protection of environmental concerns. The EPPs will be included as sections within the EMM document.

1.3.3.3 Environmental Master Guide

The Project has mapped the sensitive environmental areas onto the pipeline alignment maps. These maps will provide an important EMP tool for the Project design and planning phase, as well as during construction. The Guide will be updated as appropriate with new information that has become available since the previous work.

1.3.3.4 Sensitive Wildlife Areas and Activity Restrictions[3]

The Project expended significant effort in the past to identify sensitive environmental areas and associated activity restrictions along the Project right-of-way. This includes the field studies and identification of sensitive wildlife areas along the Project route. These are mapped on the Environmental Master Guide. The locations of these areas and the associated restrictions will be reviewed and updated as appropriate using contemporary information including, among others, the existing Zones of Restricted Activity (ZRAs) established for the TAPS.

1.3.3.5 Stream Crossing List and Activity Restrictions[4]

As with wildlife resources, a significant effort was expended in the past to evaluate streams and rivers crossed by the pipeline route, including the presence of fish. From the list of all fish streams, several were identified for special consideration for construction and other activity scheduling restrictions. The streams and the restrictions are noted in the Environmental Master

Guide. The list of streams and the associated restrictions will be reviewed and updated as appropriate using contemporary information including, among others, stream lists and activity restrictions developed for the TAPS.

1.3.3.6 Environmental Control Schedules

The Environmental Control Schedules are a series of critical path schedules that outline the interaction between the EMP and the other Project Teams. These schedules have been developed for several of the environmental protection programs and will be updated as appropriate.

1.3.3.7 Environmental Training Materials

The EMP will develop a library of training materials as part of the Environmental Briefings, Orientation, and Education Program. These are outlined in Section 11 of this volume (ENVIS11).

1.3.4 Implementation

The functions of the PEMS will serve all phases of the Project:

- Planning and Design
- Construction
- Rehabilitation
- Operation & Maintenance
- Decommissioning

During the planning and design phase, Environmental Management staff will provide the technical design team with specific criteria and methodologies for environmental, socioeconomic, and subsistence protections related to the working Project design.

During the construction phase of the Project, the EMP staff will be fully engaged with integrating and implementing the environmental programs. During this phase, several of the tools provided by the PEMS will become especially useful to access compliance information, track schedules, document compliance, and produce reports for field supervisors, construction managers, inspectors, and others.

The EMP duties will continue through the rehabilitation, operation and maintenance phases of the Project.

1.4 FIGURES AND TABLES

(None)

1.5 BIBLIOGRAPHY

ADEC (Alaska Department of Environmental Conservation). 2002. Department Web Site: http://www.state.ak.us/dec/home.htm.

ADFG (Alaska Department of Fish and Game). 2002. Department Web Site: http://www.state.ak.us/adfg/adfghome.htm.

ADNR (Alaska Department of Natural Resources). 2002. Department Web Site: http://www.dnr.state.ak.us/.

ISO (International Organization for Standardization). 2002. Web Site: http://www.iso.ch/iso/en ISOOnline.frontpage.

1.6 ATTACHMENTS

Attachment A – TransCanada PipeLines Limited Health, Safety and Environment Commitment Statement

ATTACHMENT 1.A

TransCanada PipeLines Limited

Health, Safety and Environment Commitment Statement

Health, Safety and Environment Commitment Statement

The executive leadership team, management and employees at TransCanada are committed to being an industry leader in health, safety and environmental practices, to maintaining a safe and healthy workplace and to protecting environmental quality.

We believe excellence in Health, Safety and Environment practices is vital to the well being of all people everywhere and essential to all aspects of our global business.

The following principles will guide and measure our corporate goals and objectives in Health, Safety and Environment:

- ⇒ we conduct our business so it meets or exceeds all applicable laws and regulations and minimizes risk to our employees, the public and the environment;
- ⇒ we are committed to continuously improving our Health, Safety and Environment performance;
- ⇒ we will continually promote employee safety on and off the job;
- ⇒ we believe all occupational injuries and illnesses are preventable;
- ⇒ we will respect the diverse environments and cultures in which we operate;
- ⇒ we will endeavor to do business with companies and contractors which share our expectations for Health, Safety and Environment
- ⇒ performance and commitment and we will regularly assess their performance;
- ⇒ we will use our influence with companies in which we have partial ownership, to meet the Health, Safety and Environment Commitment of TransCanada, and
- ⇒ we support open communication between TransCanada, the public, the scientific community and policy makers and public interest groups who research, develop and implement standards for health, safety and environmental protection.

At TransCanada, we believe all employees are responsible and accountable for Health, Safety and Environment Performance.